QUISTORP AND "ANAESTHESIA" IN 1718

Ray J. Defalque, M.D. and A.J.Wright, M.L.S.
Department of Anesthesiology Library
School of Medicine
University of Alabama at Birmingham

Introduction

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On July 20, 1718, Johann Bernhard Quistorp (1692-1761) appeared in the great auditorium at the University of Rostock, in what is now eastern Germany, to submit to a public examination of his doctoral thesis, (*Disputatio inauguralis medica) De Anaesthesia,* or, "Anaesthesia, a state of insensitivity." This document is dedicated to the university's anatomy and botany professor and dean, Dr. George Detharding (1671-1747), who taught there for some 35 years. (1) Detharding was a prolific author on medical and other topics; the U.S. National Library of Medicine owns several dozen of his works.

Written in the customary Latin, Quistorp's dissertation was printed by J. Wepping, “Printers of the Court and University”, as the title page announces, in that same year. The full document was translated into English for the first time in 1999 by Ray J. Defalque. Original copies are rare. According to OCLC’s WorldCat database, which includes the holdings of most major and many minor libraries in the United States and some elsewhere, the only copy in the United States is held by the National Library of Medicine’s History of Medicine Division. That copy has been microfilmed and can be borrowed in that format via interlibrary loan. Our departmental library has a photocopy, as does the Wood Library-Museum of Anesthesiology.

Quistorp was born in Rostock in August, 1692, the son of pharmacist Bernhard Balthasar Quistorp and Mary Elizabeth Kruck, the daughter of a prominent local merchant. Quistorp's father provided him with a good education, first with private tutors and then at the Gymnasium at Gustrow. He entered the University of Rostock, which was founded in 1419 and is the oldest university in northern Europe. There Quistorp studied for five years under Detharding, completing a 75-page thesis on the effects of purgatives, *Scrutinium operationis medicamentorum, nominatim vomitoriorum, purgantium*…, which was printed in Rostock in 1713. Then he spent two years at the University of Leipzig medical school, where he studied therapy under Johann Bohn (1640-1718), pathology under Augustus Quirinus Rivinus (1652-1723), materia medica under Ermullern [whom we have yet to identify], and surgery and anatomy under Johann Wilhelm Pauli (1658-1723). After Leipzig, Quistorp traveled to other German cities such as Vienna, Prague, Munich, and Hamburg to meet and learn from the prominent physicians there. On July 19, 1718, he received the title of physician and defended his dissertation the following day. By this time Quistorp's medical education and experience were extensive, and he established a practice in Rostock.

In 1742 Quistorp was named city physician by the town magistrates. On July 25 of the following year, he began a teaching career much delayed by his busy practice. His inaugural lecture was devoted to "De curatione corporis morali " (on the moral cure of the body). Over the years Quistorp delivered several Easter, Christmas, funeral and other public orations. At least one of his religious orations, *Gloriosissimum resurrections Jesu Christi festum…*, was printed in Rostock in 1751. One of his funeral speeches, in 1745, was entitled "Anaesthesia," no doubt based on his 1718 dissertation. Other topics were also religious in nature; two praised Prince Carl Leopold, Archduke of Mecklenburg. In 1752 Quistorp published a discourse, *De Acidorum indole et effectibus* (on the nature and action of acids). Quistorp died on December 8, 1761. (2) Nothing is yet known about Quistorp's family, assuming he had one. There was a Johann Christian von Quistorp who published several titles in Rostock between 1778 and 1793. A Johann Jacob Quistorp [1717-1766] also published several items in that city in the 1750s.

The earliest appearances of the word "anaesthesia" in modern western literature prior to Quistorp and known to us are in Phillips, *The New World of Words: or, Universal English Dictionary* (6th. Ed., 1706), and Castelli's *Lexicon Medicum Graeco Latinum* (1713), where it is defined as a "privation of the senses." Yet the word with this and other definitions was used widely by ancient Greek and Latin authors, and was apparently coined between the 10th and 5th centuries BC. (3) Among the authors who used the word to denote deprivation of the senses or insensitivity to pain are Linnaeus, Epicurus, Hippocrates, Hippon, and Demosthenes. Isocrates, Demosthenes and others also used the word to mean either stupidity or irresponsibility. Plato, who used the term 18 times, implied both meanings. In *Timaeus,* Plato used the word several times to indicate a condition where an impulse does not reach the brain.

Galen, a Greek physician from Asia Minor born in 141 AD, used the word to describe “the dullness of those who think differently.” (3) In his *Ethics,* Aristotle defines it as the opposite of “debauchery and prudence.” (4) Dioscorides Pedanius, a first century AD military physician under the Roman emperors Claudius and Nero, used the word to describe a mixture of wine and mandrake root extract useful for insomnia, chronic pain, and "during cutting and cautery." (5) Dioscorides' *De Materia Medica*, in which this description appeared, remained in use well into the Renaissance, as did the works of Galen. Their influence in medical practice over so many centuries may account for the survival of the rather obscure word “anesthesia” and its association with a state of pain deprivation.

Between Quistorp and Oliver Wendall Holmes' suggestion of the term to William Morton in a famous letter dated November 21, 1846, the word appears in several English-language dictionaries and some other medical works and generally is defined to mean a loss of the sense of touch. Holmes acknowledged this definition and his sources as “…more particularly (as used by Linneaus and Cullen) to objects of touch. (See Good—Nosology, p. 259).” (6) Holmes notes in his letter the presence of the word in John Mason Good’s *System of Nosology*, published in 1823, where it is described as “total insensibility to objects of touch.” The word

was also used in several medical journal articles and a dissertation between 1808 and 1838. (7-12)

An early appearance in English seems to be Phillips, *The New World of Words: or, Universal English Dictionary* (6th. Ed., 1706), followed by Bailey, *Universal Etymological English Dictionary* (1721); James, *Medical Dictionary* (1743); *New and Complete Dictionary of Arts and Sciences* (1754); Motherby, *New Medical Dictionary* (1775); Chambers, *Cyclopedia* (1791); Quincy, *Lexicon Physio-Medicum* (1794, 11th); Morris, *Edinburgh Medical and Physical Dictionary* (1807); Parr, *Medical Dictionary* (1809);); Hooper, *Lexicon-Medicum; or Medical Dictionary* (2nd American, from 4th London edition, 1824); and others. The term also appears in the first edition of the *Encyclopedia Britannica* (1771) and its first American edition (1791-1797). Strangely, the word is absent from the eighteenth-century's greatest dictionary, that of Samuel Johnson. (13) Further research will be required to determine just how many early English language dictionaries and other works included this term and how soon it appeared. Since the word is included in Phillips' 1706 edition, "anaesthesia" probably predates 1700 in English sources.

Quotations from several of these dictionaries demonstrate how the word had retained both physiological and moral meanings from the ancient Greek and Roman authors. The 1706 Phillips defines the term as "a Defect of Loss of Sense which happens to Persons troubled with the Palsie or that are Blasted." Interestingly, Phillips defines "analgesia" as "Indolency, a being free from Pain or Grief." Bailey's 1730 edition gives "anaesthesia" in Greek and then defines it as "a Loss of, or Defect of Sense, as in such as have the Palsey or are blasted." James defines it as "Insensibility. A kind of Resolution of the Nerves, accompany'd with an Abolition of the Sense of Feeling." *The New and Complete Dictionary of Arts and Sciences* of 1754 noted "anaestesia" as "a term used by some physicians for a privation of sense. Motherby's 1775 medical dictionary defined the word as "Insensibility. A resolution of the nerves occasioning loss of feeling." By the early 1800s the authority of William Cullen appeared in some definitions. Morris' 1807 *Edinburgh Medical and Physical Dictionary* has the longest definition yet found, which begins (after the Greek origin), "a loss of the sense of touch. It forms a genus of disease in the class *locales,* and order

dysaesthesiae of Cullen." Hooper's 1824 American edition uses that portion as it's entire definition.

Quistorp defines anesthesia as "a spontaneous, deep, more or less persistent loss of sensation by the whole body, except by the organs supporting the pulse and respiration. The brain is plunged into a deep, strange, more or less pleasant trance." (Chapter 1, Definition 1) He notes that the term "has become accepted in the Greek and Latin medical literature." In Chapter 1 of his dissertation, Quistorp explores seven definitions and their corollaries important to his topic. Eleven relevant axioms of human physiology and their corollaries make up Chapter 2. Chapter 3 consists of four observations about individuals in a state of anesthesia. The final chapter offers 21 hypotheses, proofs and corollaries in which Quistorp explores such characteristics of the state as whether or not anesthesia is more common in women, educated people, or whether intense pain can cause anesthesia. Perhaps of interest to us moderns is Hypothesis 14, "Vapors (fumes) entering the body may produce anesthesia."

According to Quistorp, anesthesia can exist in four degrees or types. The first, or "true anesthesia," seems to correspond to our concept of deep coma. The second degree is associated with religious ectasy or some form of intense enthusiasm. A stupor or lethargy as in cachexia is the third type. Quistorp's final type would seem to be equivalent to fainting or syncope.

1. First degree ("true anesthesia") or CATALEPSY (DEEP COMA): It occurs suddenly, is complete, and generally permanent and resists any treatment. It may be congenital or acquired. It occurs spontaneously or after body damage but remains after the body returns to normal state. Pulse and respiration are intact and normal. The limbs are rigid, flexed in the "praying" or "supplicant" position (decorticate rigidity). (Translator's Note: The author seems to describe a state of deep coma (as after trauma or a stroke? Also called in present literature "locked-in syndrome" or "coma vigilans" or "akinetic mutism." Deep coma or catatonic schizophrenia) may be a more exact translation.)

2. Second degree: ECTASY. This is the response of the mind to divine stimuli, the mind becomes entirely occupied by happy, divine sensations which block off all other sensory stimuli coming fro the body to the mind. The mind is shut off but the body remains intact with normal pulse and respiration. The limbs are supple. There may be or not movements of the limbs and/or tongue. Because there is a divine dimension to this state, it does not respond to drugs or other medical treatments. ENTHUSIASM is a mild form of ecstasy (monomania?).

3. Third degree or CARUS. This is a stupor, which occurs gradually but generally becomes quite deep and is permanent till death (translator's note: From the context, the author seems to describe our modern equivalent of "cachectic lethargy" or "cachectic inanition" or stupor. Responses to some stimuli still persist, at least initially, especially tactile stimuli.

4. Fourth degree: This is SYNCOPE or FAINTING. There is mild, transient loss of consciousness, but with spontaneous and rapid recovery. There is a short, transient respiratory arrest and the pulse disappears or becomes very weak. The face is pale, the body is flaccid.

True anesthesia (first degree or catalepsy) is a deficit of the mind/soul. It is congenital or acquired, generally occurs suddenly. It is most often permanent though spontaneous recovery of some sensations (responses to stimuli) occasionally occurs spontaneously; this improvement may be transient.

Anaesthesia, derived from the Greek word "lack/loss of sensation" is a spontaneous, deep, often permanent loss/lack of all sensory impulses to the mind/soul, while the body is untouched, with pulse and respiration remaining intact.

The word anesthesia has been used in the Latin medical literature but it also has other Latin equivalents: "emotio mortis" (death-like mental status) or "vigilans sopor" (alive sleep). We would call it in German "state of

insensitivity" or "dullness" although in German dullness is used to describe a stupid person.

It is also called stupor or deep sleep but in stupor tactile sensations and their responses to tactile stimuli are preserved.

The seat of all sensations is the mind/soul. Sensations are brought to it by the organs of the senses of the body; from the mind/soul, flow responses to stimuli as body reactions in the normal person. Thus mind/soul receives and produces (emits).

Anesthesia may be caused by body damage but later the body returns to normal while the anesthesia (i.e., disease of the mind/soul) persists.

If congenital, anesthesia is impossible to cure; if acquired, still difficult to cure but some physical remedies can be tried, though not effectively if anesthesia is very deep. If slight and transient, those remedies may be helpful, though not well proven: vesicants, compresses, emetics, inhalation spirits, rubbing skin dry or with alcohol or various other products.

In his work Quistorp cites a number of authorities for various statements. Sometimes he gives a name and publication; other citations are just the name of the authority. The authorities cited and their locations in the text are listed in the table below just as Quistorp has cited them. In addition to these authorities, Quistorp also cites various Greek and Roman authors such as Hippocrates, Pliny, Galen, and Seneca as well as St. Augustine and various Biblical passages. Further investigation of the sources listed in this table may offer clues as to just what happened to the concept of "anaesthesia" between the ancient Greeks and Romans and Quistorp's consolidation of current knowledge.

LOCATION IN Q's TEXT	AUTHORITY CITED
Preface	Dr. D.C.J. Langius, *Physiology*, p.126
Chapter 1, Definition 5, Corollary	Henry of Heer [Q says Henry claimed to have observed over 1000 cases of catalepsy]
Chapter 3, Observation 1	Bruron, *Dict Med,* "ectasy" chapter
	Thomas Crenius, *Animad Philos & Hist* 3:134

	Cardanus, *Libr De Rerum Varietate,* Chapt. 4
	Aeschyle, *Lecicon*
	J.F. Buddeus, *Inst Theol Mor Disp,* 1:5:17
Chapter 3, Observation 2	Rondet, *How to Cure Diseases* 1:10
	Hanovic, *Encyc Med Lib* 1:7
Chapter 3, Observation 3	Praeses
	Erasmus 4:4
	Cren, *Animal Philolog Hist* 3:141
Chapter 3, Observation 4	Carpsovio, *Quest Crim* 1:5:65
	Guill Fabricius, *Surgical Observations*
Chapter 4, Hypothesis 1	Dolaeus
Chapter 4, Hypothesis 2	J.P. Brunonis
	S. Blancardi, *Lex Med Ing Batav,* 1690
Chapter 4, Hypothesis 5	Aldenburg
	J. Caboldi
	A.P. Schreier
Chapter 4, Hypothesis 7	Beemano, *Origin*, p.691
Chapter 4, Hypothesis 8	M. Causobonus
	Buado
Chapter 4, Hypothesis 13	Coret. Agripa, *Occult Philosophy*
	Mich. [Michael?] Freudii, *Wisdom and Questions of Witchcraft*
	Bodinus Wierum
	Carpzonio
	Tabor, *Tract Analys. Torture*
	J. Wichandum
Chapter 4, Hypothesis 15	Restitutus (Parish Church of Calamensis)
	Strickius 7:4:16
	J. Oldenkoppio
Chapter 4, Hypothesis 16	Leonid. Poliatr., physician
	Henry of Heer, *Med Lit Obs* 1:3
Chapter 4, Hypothesis 17	Fechtio, *Precise of Moral Theology*

Chapter 4, Hypothesis 18	Christina Paniotova, poetess
	Beckmanus, *Dissert De Prod Sanguinis*
	John Gerdisii [professor at University of Rostock]
	Gripicus Alma (Grisenwald, 1663)
Chapter 4, Hypothesis 21	A.D. Brodelius

The translator [RJD] has a number of comments about Quistorp's work:

1. The text is awkward. I've tried to do a literal translation so as to keep the author's meaning.

2. Quistorp uses the word ANIMA all the time; in Latin this means mind, soul, vital center, breath. In the text here, it seems to me that he uses it as soul, mind, and occasionally brain. Readers will have to use one of the three meanings according to the context.

3. He suggests that the word anaesthesia was already used by the Greeks and Romans. The word is not in common Latin dictionaries I used, but I did not check the big ones like Cassell. This Greek origin is quoted in Osler's papers in 1918 (see TE Keyes). Thus Quistorp would not be the first one to have used the word.

4. His use of the word ANAESTHESIA is complex. Here is my interpretation:

   a) He starts with the literal Greek meaning; absence of sensations as caused by sensory stimuli (light, sounds, pain, etc.). This is very much what we call general anesthesia in our practice. He uses the term in our context when he mentions anesthesia caused by fumes, alcohol, and so forth.

   b) At times he means unconsciousness from damage/trauma to the brain, as e.g. after a stroke. Not only does the brain not register sensory stimuli, but it also does not think, memorize, etc. Here the meaning is coma after physical disease of the brain tissue (stroke, blow, disease).

   c) At other times he describes a state in which the "anima" is in deep contemplation, deep preoccupation to the point that it cannot perceive (due to lack of attention) the sensory stimuli. There are abnormal, pathological thoughts (hallucinations?). This would then refer to true psychoses (mental diseases) like schizophrenia, e.g., catatonic schizophrenia. At times he seems to mean diseases like clinical depression, involutional psychosis, etc.) He also at times seems to describe things like narcolepsy, hysteria, cataplexic schizophrenia. For those diseases, the "bad" deep thoughts could be displaced by good things like music, love, etc.

5. Apoplexy: He seems to mean the coma and muscle changes immediately following an acute brain stroke (cardiovascular cerebral accident).

6. Ecstasy or mystical rapture. Commonly described in religious literature with mystic saints where the whole mind is occupied with divine visions to the point where nothing else reaches the mind. This state does not seem to be described in our modern psychiatric literature.

7. Catalepsy: A psychosis where the sensory stimuli does not reach the brain, the patient is unresponsive to his environment, marked muscular rigidity. Rarely mentioned in modern books of psychiatry.

8. Carus: See your e-mail notes. I still can't find a good definition. In the context here he seems to mean a light coma, or lethargy, which occurs at the end of severe, terminal diseases, like cancer, malnutrition, etc. I've translated it by "marasmus," or lethargy in terminal wasting diseases.

9. Lipothymia: He repeadedly uses the term to describe what seems to be a benign, transient fainting spell.

10. Sanguineous disease: Looked in every dictionary; all mention "bloody," "sanguineous" without any other meaning. Re: definition of carus in your e-mail, might be following vascular accident (e.g., in brain), but the context here suggests transient state of excitement, like PMS(?)

11. Melancholy: Very confusing term here. "Thinking" at times he describes a melancholic temperament as what we would call type A person, or nervous. At times he seems to mean a mental disease, like depression, involutional schizophrenia, etc.

12. He seems to imply that in the type of anesthesia that we would relate here to psychoses,

In his "Preface", Quistorp explains the motivation for his work. "I cannot explain everything on this subject, and will only discuss what has been found by our savants (scientists). Let's praise those who…want to study the relationship between body and soul/mind. Their results will help mankind!"

Quistorp's dissertation is an important link between the concepts of anesthesia as mentioned by Greek and Latin authors and its modern practice. Quistorp apparently consolidated and explored the knowledge about "anaesthesia" of his time in a depth and detail never done before. His work associated inhalation of vapors and pain relief with the term "anaesthesia" in detail decades before Humphry Davy tied the inhalation of nitrous oxide with surgical pain relief in 1800. Quistorp's exploration of the topic remained unmatched until John Snow's in England in the 1850s. Quistorp's work also shows us vividly just how long the ideas of inhalation

and pain relief percolated together in western culture before finally meeting successfully in 1840s Boston.

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Inaugural Medical Dissertation

ANAESTHESIA

(on being unsensitive) (In German)

With the gracious consent of the Medical Faculty of Rostock

Under the presidency of Dean Geo. De Tharding,
Physician & Famous Professor
Academic College of Natural Sciences

To obtain the degree of Doctor and obtain the honors,
rights, and privileges related to it

Submitted to public examination by

Johannes Bernhard Quistorpius, of Rostock

Great Auditorium, July 19, 1718

Printed by J. Wepping, Printers of the Court and University

Dedicated to God, Country, and my Parents and Teachers

PREFACE

As well recognized by the medical profession, infants and pregnant women are the most difficult patients to treat. Physicians are hindered by the plasticity and the idiosyncrasies of their mind/soul (anima). I must admit that their diseases are most difficult to deal with, esp. the diseases of the mind/soul and more esp. what we call diseases of the sleep ("sleep disorders"). In infants, the "vital principle" (brain?) may have been damaged by trauma sustained during pregnancy or during labor. In PG women, the mental diseases are transient and generally disappear after delivery.

As for the diseases originating from the passions of the mind/soul, how severely they disturb the protective mechanisms of the body! How difficult it is to overcome them, and how easily do their paroxysms recur! And (what is worse) how easily do they become permanent! And how many minor factors contribute to their recurrence! Whereas other diseases are generally easy to cure, diseases of the mind/soul are often intractable, refractory to any treatment, prone to sudden recurrence despite the physician's best efforts.

Even more serious are the so-called "sleeping disorders" in which all the protective and health-maintaining mechanisms of the body disappear, and in which the "vital principle" (brain?) is preoccupied elsewhere and cannot protect or restore the physical health and in which sleep is similar to death. Unlike other diseases in which they physician (like a rider) can use briddle

and spurs, in the disease of the mind/soul, the physician has little control and can make little progress.

The shorter those mental diseases have lasted, and the more difficult they are to cure and the more unsatisfactory are the results of the treatment. Long lasting diseases resulting from the passions of the mind/soul, such as raving mania(?) (ferocia insolentia) profound apathy are also resistant to treatment but at least they give the physician more time to try various treatments and a better chance to treat them. But in a sudden disease with a rapid course, the physician has very few days, even hours, to restore and maintain the patient's health. Whoever doubts those difficulties should follow the course of a patient with apoplexy, deep coma (Coma vigilante?), or see the convulsions associated with those diseases. How little can be done by science and medicine to help those diseases and how quickly do they lead to death! A medical aphorism about such diseases is that nature may spontaneously cure them, but not the artificial medical treatments.

One might try to investigate those diseases, to study the factors which cause and influence the natural sleep, and the drugs which affect it, e.g., the inhalations which, thru the palate, reach the brain and "freeze" it, compression of the nerve roots, and the factors which decrease or suppress the "animal spirits" (vigor?) but this can never explain the "sleeping disorders." Why, e.g., do religious rites (things) at religious meetings put some people to sleep whilst they stimulate other people to dance and to go into convulsive trances?

But I will not linger on those topics as I want to discuss the diseases of the mind/soul that I call "ANAESTHESIA," more commonly called "sleeping diseases," which are serious conditions, whose cause is unknown, and whose treatment is generally very difficult. The famous Dr. D.C.J. Langius (Physiology, p. 126) mentions that common experience knows what a sensory stimulus is, but this stimulus does not always reach the brain to produce a sensation/idea, e.g., that stimulus may not reach a damaged part of the brain.

I cannot explain everything on this subject, and will only discuss what has been found by our savants (scientists). Let's praise those who, like the Divine Creator, want to study the relationship between body and soul/mind. Their results will help mankind!

CHAPTER 1

ON DEFINITIONS AND EXPLANATIONS OF TERMS USED IN THIS DISSERTATION

Definition 1

Anaesthesia is a spontaneous, deep, more or less persistent loss of sensation by the whole body, except by the organs supporting the pulse and respiration. The brain is plunged into a deep, strange, more or less pleasant trance.

Corollary

The word ANAESTHESIA comes from the Greek (a) which means deprivation and (anesthesia) which means sensation, and as such it has become accepted in the Greek and Latin medical literature.

Latin writers have used several synonyms, such as absence of mind (emotio mentis), excitement of the mind (commotio mentis), excess of senses, vigileant coma, atonia, etc…but this does not explain the condition's nature.

Literally speaking, in/un-sensitivity or, better, "unsensation" means absence of tactile sensation, but this does not fit the diseases that we are studying here.

The German term "empfindlich sein" (to be un/in-sensitive) is controversial as in colloquial German this often applies to a person who is stupid or of "slow mind." The term "deep sleep" or "stupor" used by some is also unsatisfactory to express the concept ANAESTHESIA. Though there is deep sleep in anesthesia, a deep sleep is not always a true anaesthesia. Stupor means a change of, but not always a true loss of, tactile sensations.

If we use the German term "to be un/in-sensitive" this does not mean contempt or ignorance of the Greek language, but it is a good term to express the loss of all sensation in its proper sense, as we will show in this dissertation.

DEFINITION 2

A stimulus reaches the organism thru the sensory organs; nerves from that sensory organ then lead the stimulus to the brain. The brain then registers that sensation and makes a response to it. When that response occurs again in the absence of an external sensory stimulus we talk of memory, or even imagination (fiction).

Corollary

We must accept that the origin (mechanism) of sensations is not known well enough that physicians might be able to influence them. In our present state of knowledge, all we can agree on is that, of the sensory stimuli sent to the human organism, some are directed to the body, others to the mind/soul. When they are directed to the mind they first must pass through a sensory organ; when they reach the mind they then produce a sensory response.

Deduction 1

It is thus established that phenomena can originate in the mind in the absence of a sensory stimulus. This is then called memory or imagination. This spontaneous phenomenon is weaker than the response to an external sensory stimulus.

Deduction 2

The response to the impulse of the memory is always weaker than the response to an external sensory stimulus.

Deduction 3

If the response to a stimulus from the memory is frequently repeated, the mind develops more speed and strength in its response, even with very old memories. If this response of the memory has been absent for a long time, it can return very quickly and the memory can again apply it to any stimulus.

DEFINITION 3

Anima, animus, mens, vital principle, vital energy, vital center are all synonyms for a mental center which can recognize stimuli sent by external objects and judge whether this external source of stimuli is good or harmful to the body.

Corollary

I know that there has been much disputation to define the body's vital center. Theologians, physicians, and philosophers have quarreled about it for centuries, still quarrel now, and will do so till the end of times.

I will not take sides in that dispute whether there is only one or several vital control centers. There is no contradiction in inferring that the various activities of the mind, such as memory, imagination, judgement, etc… are various facets of a single control center dealing with impulses coming from various external objects.

This is similar to a war lord presiding over the members of his war council or a Roman tribune (commanding officer of legion). It is not below their dignity to delegate some tasks to their lieutenants. The mind can preside over the movements of the body, receive and control the impulses from various parts of the body. This relation between mind and body should be familiar to the presiding body of this university.

DEFINITION 4

As far as I can tell, ectasy means unnatural, sudden, severe deprivation (cessation) of the mind's response to the external sensory stimuli and may even include cessation of all movements of the limbs and of the tongue. The pulse and the respiration remain intact. The body remains soft and supple.

Corollary

Enthusiasm differs from ecstasy not only as being a less severe loss of consciousness, but also by being more common. Ecstasy, called "delirious melancholy" by some physicians, has been extensively discussed. Ecstatics do not like to discuss their experience and do not encourage others to seek

ecstatic experiences. Those returning from an ecstatic trance, like St. Paul (Cotinth), cannot tell if they left their body or not.

It would be useful, however, to study the characteristics of that condition, its duration, its recurrences, its antecedents, and some characteristics of ectatics, such as their age, mode of life, etc…to discover their state of mind (since they have a tendency to hide their condition or lie about it).

I hope that this description of ecstasy will suffice to differentiate it from other very similar diseases with which it is often confused by the inexperienced. The softness and suppleness of the body differentiates it from epilepsy in which there is limb rigidity and spasms of the hands, and from apoplexy in which respiration is embarrassed, or from catalepsy in which the limbs become rigid. The sudden loss of sensorium (consciousness?) distinguishes it from the "carus" (marasmus?) in which the consciousness persists, or from the lethargy in which the senses (sensorium) is lost. The normal pulse distinguishes it from hysteria in which the pulse disappears, and the intact respiration differentiates it from lipothymia and fainting (syncope) in which the respiration disappears.

DEFINITION 5

Catalepsy is an unnatural, severe, sudden loss of perception of sensory stimuli (consciousness). The limbs are rigid and held in extension and external rotation; the pulse and respiration remain intact.

Corollary

I question Henry of Heer, a physician who claims to have observed over 1,000 cases of catalepsy or the enthusiastic writers who have extensively written about catalepsy and claim to have seen many. There have never been 1,000 cataleptics in the whole world. However, the signs of catalepsy will easily help distinguish it from those other diseases; sudden loss of consciousness, rigidity of limbs, intact pulse and respiration are characteristic and distinctive. Catalepsy must also be distinguished from conditions in which there is total body rigidity with generalized spasms such as tetanus, opisthotonos, emprosthotonos. These start and stop suddenly and spontaneously, and the consciousness remains intact so that the

patient sees and hears everything during his attacks and remembers everything once the spasms have stopped.

People made frozen and rigid by intense cold also lose their consciousness and body motility but quickly return to normal once they are re-warmed. The term “frozen” applied by some physicians to cataleptics is inappropriate. Another similar condition is that of people hit by lightening who fall to the ground paralyzed; it is often difficult to find whether pulse and respiration persist in such patients. I will not mention other diseases similar to catalepsy; catalepsy mainly differs from them by the body rigidity it induces.

DEFINITION 6

CARUS (marasmus?) is a gradual but deep loss of consciousness (sensorium); the respiration remains intact.

Corollary

During any type of sleep there is transient arrest of the sensory activity so that the mind stops actiely seeking strong sensations (sensory stimuli); it is as if the sensory organs became tired and required some rest before resuming their normal activity. At that time the body seeks an area and assumes a position in which all sensory stimuli can be avoided; this then induces sleep. The same occurs in carus but it is permanent and the mind avoids not only the strong but also the slightest sensory sensations. Physicians are often confused by carus but its diagnosis should be easy if one thinks of its slow progress into very deep sleep, like a tired person slowly falling asleep.

DEFINITION 7

Lipothymia is a marked decrease of sensory activity with weakness and flaccidity of the whole body, pallor of the face, and loss of pulse and respiration. It generally is very transient and lasts a few moments. If it lasts longer it is called syncope.

Corollary

This condition has received various names such as leipopsychia (Hippocrates), leipothymia (Philoteus), mental weakness (Celsus), or dissolution of the mind (Pliny). Here there is not only loss of consciousness but also of body activity and all evidence of life becomes hidden. The condition must be properly identified by its symptoms to distinguish it from other conditions; this requires very good judgment.

CHAPTER 2. AXIOMS

AXIOM 1

There must exist in the human body a control center which deals with sensations.

Corollary

God has placed man on earth to propagate his species and to enjoy the wonderful world and its beauty, variety, and order, so that he may appreciate the Creator's magnificence and wisdom and embrace Him. But the Creator has also surrounded man with objects, which can injure his body. But He has made sure that man could recognize and avoid those noxious stimuli. Thus man needed organs to receive and identify those external stimuli and the sensations they caused. The body also needs a control center to collect, concentrate and duplicate those sensations and judge whether they are good and in accord with the laws of God and of the state.

AXIOM 2

This control center in man is the mind/soul.

Corollary

Philosophers who believe that the body runs automatically claim that sensations can be produced outside of the mind/soul. The ancient philosophers postulated that man had 3 souls on which the stimuli could act outside of the rational mind. They thus felt that not all stimuli reached the body thru the rational mind and that not all body responses came from it. When the body responds, it is hard to distinguish how much is due to the stimulus itself and how much is due to the mind itself. We cannot

believe that the body response does not involve the mind. If the rational mind is the only organ which knows and judges things, this rational mind must be the control center of sensations. Those who do not accept this mechanism cannot explain the memory of a pinful sensation or that sensations can influence the activity of the heart or how the heart can resume its activity after it has stopped, provided, of course, that the muscle fibers have not been completely relaxed for good.

AXIOM 3

The traffic of sensations depends on this control center, i.e., the rational mind.

Corollary

Although it is commonly thought that the mind remains passive during the traffic of sensations, this can be easily refuted by observing the sensory organs and how in man the sensory stimuli to those organs can produce an intelligent motor activity. For instance, don't hunters become more careful when observed by wild animals? Don't we look around more carefully in the dark, flexing our neck or cupping our ears when we think that we are hearing some noise? Don't blind men have an increased tactile sense? Doesn't smell and tastes stimulate our nose or tongue?

Because of the mind the body can react to sensory organs with motor responses. If the activity of the mind or of the sensory organs stops, the sensory stimuli are blocked, the motor responses stop, and the body slips into torpor (apathy).

AXIOM 4

The sensory activity originates from the mind thru the active tension of the nerves.

Corollary

Everybody agrees that the nerves are the pathways of sensations. Those sensations stop when the nerves are severed. The nerves are also the pathways for motor activity in response to those sensations. Everybody agrees that those nerves can be activated when the mind wants to produce

motor response. Thus this nerve activity is under control of the mind. Thus the mind is the relay between the sensations emanating from external objects and the motor activity resulting from those sensations. This activity not only exists in healthy people, but it persists during diseases, e.g., sick people have an increased hearing and can better discern between hot and cold.

AXIOM 5

Likewise a decrease of abolition of sensations depends on that control center.

Corollary

This axiom derives from what we have mentioned above about sensations, mind, and motor activity. This also confirmed by studies on sleep. A patient may remain alive not only when he is sick but also even when his mind function is abolished and the motor activity originates outside of the mind (see corol of def 6). During sleep or sleeping disorders, there is neither consciousness nor active response to stimuli or activity to produce intentional movements. But motor activity still can originate outside of mind. But this does not mean that the control center is situated in the sensory organ itself. In a person tired of singing or listening or in a person whose tact has become numb, the control center may re-activate (re-stimulate) the sensory organs, thus the control center can increase or decrease the active tension of the nerves.

AXIOM 6

The mind plays a greater role in the production of sensations than it does in their decrease or their abolition.

Corollary

It is difficult to agree with those who doubt or deny the role of the mind in controlling the sensory activity and claim that the body does not always respond to the mind whereas the mind is the slave of the body and that the traffic of sensations mainly takes part outside of the mind. If this was the case, suffering would be entirely localized in the body and pain could never be cured at once. Although it is the mind's role to protect the body, when

the mind is damaged or disconnected, spontaneous body movements can still occur. They originate from the memory. When the mind does not respond to reason or sensory stimuli, it still may act as a secondary center to protect the body, e.g., consider the unpleasant labor pains which are useful and are quickly forgotten after the baby's birth; those pains cannot expel the fetus as this also requires the action of the uterine fibers. I then feel justified to claim in this axiom that the mind plays a greater role in the production than in the decrease or abolition of sensations.

As shown in axiom 1, sensations are produced by stimulation of the sensory organs by external objects and this helps protect the body. When the mind's activity declines or stops, those external stimuli continue to arrive but the mind's response to them stops. Healthy people stay awake 3 times longer than they sleep but in a debilitated or diseased person, this decrease in wakefulness occurs more easily. In face of danger some of the mind's activity may return to protect the body and in sick people what's left of the mind suffices to rekindle that activity.

AXIOM 7

Moral factors play a great role in increasing or decreasing sensations.

Corollary

Moral factors may influence the mind and its responses, and, like physical factors, may produce motor reactions.

Both physical and moral factors may influence (modify) the sensory organs. This can easily be understood when on considers somebody suddenly seized by the fear of ghosts: he turns gray, rolls his eyes in every direction, stretches his ears to catch the slightest noise, his skin becomes hypersensitive to tactile stimuli, he shivers and develops goose pimples, his hair stands up, he becomes pale, his ears turn cold, shudders run up and down his spine and he cringes from the neck down. Such anxious people have a tendency to become sick. This is more common in children, women and weaklings. In moments of dangers those people's memory awakens their defense mechanisms; those mechanisms eventually subside then disappear, even when the danger is still present. This therefore influences the sensations very much.

AXIOM 8

A person's temperament (disposition, constitution) has a great influence on the production or the abolition of sensations.

Corollary

The type of sensory organs varies with the animal species and their activity varies with a person's constitution and with time, but their response to a stimulus remains essentially the same, e.g., during sleep, in which consciousness is decreased or abolished, it takes a stronger stimulus to awaken a phlegmatic person than an anxious person. Cholerics sleep very little, whereas melancholics wake up in anxiety and fear. Their sleep is restless and they have many disturbing and frightening nightmares.

AXIOM 9

Fragility of the body or of the mind/soul play a great role in the production or in the abolition of sensations.

Corollary

Under the term "fragility of the body," physicians include fear of body harm by external objects and exaggerated attention to these objects. This is translated into physical diseases (disturbances) of the mind/soul. This delicate constitution exists in children, women, and sick people. Their memory, attentiveness and sensitivity is increased in times of danger and returns to normal once the danger has been avoided or surmounted.

AXIOM 10

Accustoming play a great role in the production or abolition of sensations.

Corollary

The mind may become aberrant or fall prey to emotions. In a tired person, pleasant thoughts may induce a decrease of consciousness and initiate somnolence or even sleep. If those pleasant thoughts recur a few days later, they may induce sleep even if the person is not tired. Also, if a person gets up at his usual time, he may continue to sleep, though he is not tired, if there are no external stimuli to prod his mind.

AXIOM 11

Worries about the body functions of excretion and secretion may induce a decrease in consciousness.

Corollary

Body harm may be caused by internal or external factors. Internal conflict or loosening of the internal harmony may cause body harm. The body must protect itself vs. those harmful external factors. The mind will turn itself off and stop responding to those external stimuli and will entirely concentrate on its internal danger. If this danger cannot be surmounted and the defense mechanisms are damaged or blocked then the body's response completely stops. This occurs, e.g., sudden collapse, narcotic coma, and inhalation of coal fumes. If this persists it may lead to death.

CHAPTER 3 OBSERVATIONS

OBSERVATION 1

In all ectasies (mystic raptures) the mind/soul is completely and persistently wrapped in the object of its contemplation and this to a degree that one cannot understand.

Corollary

I will grant that his thoughts give the ecstatic the utmost pleasure. This affection is due to a total loss of consciousness. I do not plan to join the theologians for whom ecstasy is a fertile ground of discussion nor does the scope of this dissertation force me to do it. I do not want to discuss ecstasy as it is presented in the religious literature, but simply want to say that it is a disease of the mind/soul, as described above.

One may find it in saints, philosophers, enthusiasts, and fanatics and its object may be divine, supranatural, demonic, contemplative, mystic, amorous or erotic, priestly, bellicose, or scientific, etc. But in all I find the basic same explanation: the mind is entirely wrapped in the object of its contemplation in such a way that it cannot perceive or understand any other things though it may try to do so.

The ecstasy, that the theologians call divine, is attributed to a sudden illumination of the mind. Chrysostome (domed 2:Act) describe ecstasy as the mind being so wrapped in God that it detaches itself from the body. The Bible describes the saint mystics as if their mind was dead in the vision of God. Even the profane philosophers accept the concept of ecstasy and describe it as being a violent surge of the imagination, a supreme ardor of the mind. Hippocrates calls it a violent emotion of the mind/soul almost reaching the point of delirium (see Bruron in Dict Med under chapter "ectasy").

The profane philosophers use the word "rapture" as a synonym for ecstasy; this strong word means (suggests) "being pulled away from one's senses and wisdom" and thus becoming a prisoner of that contemplation.

According to HC Aggripa (see Thos Crenius in Animad Philos & Hist 3:134) rapture means persistent contemplation of sublime objects during which the mind/soul consciousness and wisdom unite to produce a most violent disturbance of the consciousness.

In researching the profane literature for cases of ecstasy, I always read that the mind/soul is continuously preoccupied with objects which may be gathered by the senses such as predicting deep philosophical considerations, all things that even a very intelligent person cannot understand.

Cardanus (Libr De Rerum Varietate chapter 4) reports that he frequently tried to abolish his senses to enter into ecstasy (rapture) through deep medications and thus try to adhere to the values induced by those deep meditations. According to him, though not all, can plunge into those deep meditations and thus enter into ecstasy.

There exist many cases of ecstasy mentioned in the literature. If one accepts that man has both a body and a soul/mind (see axiom 1) ecstasy is easily understood. This deep contemplation is not connected to any purposeful body movements, at least for a prolonged period. It is generally self-limited, and the ecstasic returns to a normal state.

During its rapture the mind is entirely preoccupied with its divine contemplation, inspired by God and its glory and entirely wrapped in it.

Really this is not a human matter (Exodus 32:20). Enthusiasm is a loss of consciousness of more or less similar degree though its exact degree is difficult to tell. There is a lack of good definitions of enthusiasm; e.g., Aeschyle (Lecicon) describes enthusiasm as a state in which the entire soul/mind is illuminated. It has also been described as if the mind/soul was occupied by a divine spirit. But I have also noticed some confusion in its meaning; thus, JF Buddeus (Inst Theol Mor Disp 1:5:17) feels that enthusiasm is a simply a lesser degree of the divine ecstasy described above. Here the mind is preoccupied and is elevated by the object of its contemplation and is enrapt by its virtues. The body becomes controlled by the state of the mind/soul and this is translated by movements of the limbs, shaking the head, great body leaps. It is arguable whether enthusiasts can be considered (as often done) as epileptics or maniacs, but enthusiasm generally includes movements of the body precipitated by the state of the mind/soul.

In some other exalted states of mind as in the "sanguine diseases" (?) (menstruation?) or mental disturbances related to those conditions, one may speak of ecstasy. Those states are characterized by divine visions, conversations with spirits, visions of hell, etc. Profane writers define this as enthusiasm. Those states are minor degrees of ecstasy, but are still called ecstasy because of their religious content. In regard to the object of contemplation of such exalted states, one might quote the old saying "The sailor talks about the wind; the farmer about his oxen." The enthusiasm may be ore or less vivid and the object of its preoccupation will depend on the person's character (temperament). I won't discuss whether this rapture is due to melancholy (folly), black bile, or other humors not whether modern medicine should ignore this theory of humors. All I can say is that the afflicted's character may produce a more or less vivid response of the body to a stimulus.

I will use the term ecstasy, whatever its degree or its object, whenever the mind/soul is immersed in deep thoughts. However, one may classify the cases of ecstasy according to the object of their preoccupation, I think that one can rule out ecstasy whenever the mind/soul is not immersed in a deep and continuous contemplation of an object external to the mind, and to a degree that the reason cannot understand.

OBSERVATION 2

In true catalepsy, severe weariness invades the mind and the willpower disappears along with the mental activity.

Corollary

Because the description of catalepsy often includes cases not described in definition 1, I will use the term "true catalepsy" whenever I describe that type of catalepsy. This condition raises many questions as it is extremely rare. I believe that it is caused by an obstruction (blockage) by the mind's weariness of its reflective activity and of the will. Normally the mind/soul perceives a stimulus and responds to it but here the mind loses its interest and the voluntary movements are replaced by muscle contracture. If a normal person suddenly and severely becomes frightened, his mind/soul may transiently lose its sensory activity and a short-lived brain weariness occurs. This is called lipothymia or syncope.

In true catalepsy the mind's intense weariness leads to a deep and constant suppression of its response to any stimulus; instead of purposeful muscular responses to the stimuli there is constant, ineffective (useless) tension of the muscles, resulting in rigidity of the head and of the limbs. This strongly confirms my suspicion that catalepsy controls those muscles and that those muscles cause the rigidity of the body, except for the muscles in charge of the respiration, the heart beat, etc. Muscles are instruments of the mind. If the mind is filled with eariness (boredom) or unpleasant thoughts, the muscles of the face, hands and feet cannot reach for, feel, or remove the objects in front of them, even though the respiratory and cardiac muscles continue to function. This is typical of catalepsy and is confirmed in the literature, e.g., by Rondet in his book "How to cure diseases" (1:10). He tells the story of a girl being married to a young man she hated and who became cataleptic after living with him. Her health returned after she went to live with her father and forgot about her husband. But she relapsed into catalepsy as soon a she would see her husband or hear his name mentioned or visited the house in which she had lived with him. She would become unconscious, eyes wide open, and totally rigid except for the abdominal and thoracic muscles.

In his Encyc Med Lib (1:7) about catalepsy, Hanovia describes a man who fought in taverns and went into fits of rage, becoming unconscious and rigid, as if turned into stone, with eyes wide open though unable to see and not answering any questions. The only signs of life were his strong pulse and strong thoracic respiratory movements. I'd like to add another case cited by Henry of Heer (loc cit), that of a cataleptic monk unconscious and looking like a marble statue, with one knee on the ground and the other bent, one arm on the bent knee and the other arching in the air with his fingers spread; he thus looked like a marble statue of the god Mercury. His eyes remained open, his respiration was intact and he had strong radial and temporal pulses.

OBSERVATION 3

Pain is markedly decreased when the mind/soul is deeply preoccupied.

Corollary

The normal response to pain is a most unpleasant feeling and an intense and rapid muscular movement to prevent any further body harm. But if at that time the mind is deeply preoccupied elsewhere, this reflex response to pain may be attenuated and this to a degree which is parallel to the depth of that preoccupation. Two such objects of preoccupation are light (to a degree) and pain itself, e.g., pain from a kidney stone will mask the pain caused by joints; and a severe toothache may obscure the pain of renal colic. Not only can perception of pain mask another pain, but other sensations, pleasant or unpleasant, can too, e.g., Praeses tells how his gouty pains could be soothed by the sound of coins falling into a bronze urn; Erasmus (4:4) describes how he could relieve his toothaches and renal colic pains by concentrating his mind on other things. It is also well known that inebriety may decrease pain as alcohol leads the mind towards other objects of thought, as noticed by Plato (Repub 1). How right are the prophets (Psalms 36:9) who claim that a serene mind/soul becomes obvious to pain. I will also mention the sacred exegetes, e.g., Cren's book (Animad Philolog Hist 3:141) who also describes how his pain was removed while he was in ecstasy. I think that all will agree that severe pain may be decreased or even abolished when the mind is occupied elsewhere.

OBSERVATION 4

Anesthesia may occur in somebody submitted to torture. Criminal Archives frequently mention that somebody was tortured to confess but fell asleep instead. Even when burned by fire or acid that person felt nothing, had become "unsensitive," falling into some sort of sleep. One said, "He had shed no tears."

One can easily believe the story of Peter Jansen, an 85 year-old Swede, accused of sacrilege. When threatened with torture he fell into a (simulated) mutism and said nothing for several weeks, not eating and only taking a few sips of brandy every morning. Once applied, his torture produced anesthesia. The accused was placed in the "boots" then interrogated; he fainted and was released; he recovered and torture was reapplied and he fainted again. He was resuscitated with saltpeter and vinegar but still would not confess. He again was tortured and passed out. He would not confess, not even when a strong "boot" was applied to the other leg. All this lasted 1½ hours.

I have noticed that many authors fail to explain such withdrawal from torture and passage into anesthesia. Some, e.g., Carpsovio, suspect witchcraft, mentioning that many accused mumble magic formulas while under torture. The book (Quest Crim 1:5:65) mentions that pieces of paper with magic formulas had been found in some accused's clothing. The accused should always be undressed and searched for hidden amulets. Bodinus even advised to have the accused to discover such amulets as joints or pieces of heart (chest) of stillborn, unbaptized, infants, stone powder etc. All those amulets are procured by the devil thru witches and magicians. But this type of sleep can also be produced by drinking narcotics or stupefying drinks or inhaling fumes. A person can be aroused from such sleep by various means. Guill Fabricius in the preface of his "Surgical Observations" mentions that pulling arms up and down may constrict the chest whereas crossing the arms on the chest will relax it. I will not discuss any other mechanism of anesthesia but will only say that anesthesia can occur and persist under the suffering caused by torture.

CHAPTER 4 HYPOTHESES

HYPOTHESIS 1

Anesthesia is an affliction of the mind/soul, not of the body.

Proof

Even though some organs may become damaged under anesthesia, the pulse and the respiration remain intact (see def 1) and though eventually the body will regain its normal health (see obs 1,2) the mine/soul will remain in its deep preoccupation (def 1). The only symptoms will be those of a disease of the mind/soul (axiom 7). Thus anesthesia is a disease of the mind/soul, not of the body. QED

Corollary

To explain anesthesia, some writers have postulated that the cerebral ventricles become filled with an iced fluid which would freeze the brain, damage it, and would make it insensitive to stimuli, e.g., light. I find this difficult to imagine. This explanation, however, has been accepted by some, e.g., Dolaeus, who feel that everything in medicine can be explained by body damage or body loss. But during anesthesia the body generally is intact and healthy and pulse and respiration remain normal. The body is no more the seat of anesthesia than it is the seat of pleasure, sorrow, enthusiasm, or any other emotional state caused by external stimuli, no more than the spleen is the seat of laughter or the liver the seat of love.

HYPOTHESIS 2

Anesthesia, especially deep, true anesthesia, is very uncommon.

Proof

In true, deep anesthesia the mind/soul's attention is entirely concentrated on its object of contemplation and cannot be removed from it. The mind stops responding to the usual stimuli (axiom 6) and produce the normal reflex responses. This persistent state is very infrequent. Thus anesthesia, especially true, deep anesthesia is very uncommon. QED

Corollary

Rather than quoting many physicians who have experience with the disease, I will simply mention JP Brunonis, a man of deep learning and

extremely well read, who remains silent in the discussion among physicians whether anesthesia is very common or whether many writers often include under the term anesthesia many states of loss of sensorium (conscience?) such as narcotics or terminal states of diseases/life. I will exclude S. Blancardi (Lex Med Ing Batav 1690) who explains anesthesia by the freezing mechanism mentioned above, because under the term anesthesia he includes the loss of consciousness seen in paralytics and infected/gangrenous patients (septicemia???) But this does not seem to be true anesthesia because of the absence of its other symptoms, as mentioned by more experienced physicians, who found absence of some symptoms, e.g., speech loss. That anesthesia is infrequent as suggested by the fact that it cannot be often proven in ecstasy, catalepsy, carus, etc., in the above cited Lex.

HYPOTHESIS 3

Anesthesia may exist in various degrees.

Proof

Because anesthesia is a sensory loss and because this loss may extend from a mild decrease in sensitivity to its total abolition, there is thus wide difference in the degree of that loss. Thus anesthesia may exist in various degrees. QED

HYPOTHESIS 4

The most severe (deepest) type of anesthesia is catalepsy; a less severe form are divine ecstasy, natural enthusiasm, carus, and syncope. The lightest form is lipothymia and deep meditation.

Proof

In catalepsy, the body, under the loss of sensorium, assumes the rigidity of a tree trunk (def 5). It remains immobile and does not respond to stimuli with reflexive movements.

In divine ecstasy, normal enthusiasm, carus, and syncope, there is also a loss of consciousness, but the body remains supple and flexible (def 4,6,7)

In lipothymia & deep meditation the response to stimuli persists, except for a brief period. Thus the anesthesia is most severe in catalepsy, less so in ecstasy, natural enthusiasm, carus and syncope. It is very mild in lipothymia and deep meditation. QED

Corollary

Would one be justified in calling anesthesia a disease of the memory? Nobody healthy has anesthesia and the memory dies when the patient dies. Nobody doubts that there are various degrees of anesthesia and I won't dwell on that topic any longer.

Although physicians could throw better light on that subject, the subject would be best understood if the anatomist could dissect the brain and study its various areas/layers.

HYPOTHESIS 5

Anesthesia is more frequent in adults.

Proof

Since deep preoccupation of the mind leads to anesthesia (see proof, hypoth 1) and since that deep preoccupation of the mind is more common in adults, thus anesthesia is more common in adults. QED

Corollary

I agree that there are cases of young people suffering of ecstasy, e.g., te young ecstatic quoted by Aldenburg (see J Caboldi) and the cases of young people refusing to eat quoted by AP Schreier. There are also cases of young cataleptics and young people with carus caused by extremely sever disease (terminal disease?) but most of those "young" people were in fact young adults. Carus is typically a disease of old people.

HYPOTHESIS 6

Anesthesia is more common in women.

Proof

Women are more fragile (softer) in body and mind (axiom 9) and this leads to more worries and preoccupations. Deep preoccupations about some things may lead to anesthesia. Thus anesthesia is ore common in women. QED

Corollary

As women are softer in body than man, one can understand that their sensitivity is superior to that of man. This is commendable. Conception, gestation, and lactation are also an added burden to their physical problems due to the softer fabric of their organs. This, of course, will cause some difficulties and problems. Thus a woman's mental worries about those things may lead to deep preoccupation and withdrawal from the external world and its sensory stimuli.

HYPOTHESIS 7

Anesthesia is ore frequent in melancholic persons.

Proof

The mind of melancholics is constantly preoccupied by various subjects (axiom 8) Those constant, with violent preoccupations often lead to anesthesia. Thus anesthesia is more frequent in melancholics. QED

Corollary

Melancholics are often said to have magic powers. According to Beemano Origin p. 691, to have magic power, to be wise, to understand mysterious things are all synonyms and derive from the old German-Saxon word PFAFFEN (parson) but this word has now come to mean a person in touch with the devil (warlock, witch) or a sad or feeble-minded person or even somebody who has lost his mind. It is occasionally used to describe a raving maniac. All those conditions are often included under the term melancholic.

The concept "melancholic" has also been applied to zealots, idiots, and brain damaged persons, but melancholia is usually considered to be a reversible condition. The term, more properly, should be reserved to people who are anxious, suspicious, and who compulsively follow

regulations. Their physical status leads to this anxiety; their tissues are firm (tense), their body fluid are thick, their blood circulation very active. This type of body habitus may lead to a special type of intellectual activities. Those people are prone to undertake deep studies, to participate in great debates, they want to dominate their colleague in their arguments and they want to go ahead in life. One thus could say that most melancholics are brilliant, intelligent, driven people.

HYPOTHESIS 8

Anesthesia is more common in educated people.

Proof

Literate persons predominate in activities involving thinking, studying, and the arts and sciences. Since under anesthesia the mind is plunged into deep contemplation of various objects (def 1) anesthesia thereforem will be more common in educated people. QED

Corollary

By educated, I mean not only intelligent people, but rather all persons who study the arts and sciences and who place knowledge above everything else in life, yearning for books, and artists dwelling into the arts to improve them and increase the human knowledge.

I hope I won't be blamed if this dissertation attaches more importance to facts than to idle verbiage, and will simply mention the cases of ecstasy and other diseases quoted so wisely by M. Causobonus and Buado.

HYPOTHESIS 9

Anesthesia can be caused by moral disorders or by very serious, life-threatening body pathology.

Proof

Anesthesia is a deep sensory deprivation with the mind fixed in more or less pleasant but always deep contemplation of various subjects (see def 1).

Deep contemplation may be produced by moral troubles or severe, life-threatening body lesions. Thus anesthesia can originate from moral or physical troubles. QED

Corollary

This distinction between moral and physical troubles is important for the treatment of anesthesia.

HYPOTHESIS 10

The severe, life-threatening, body lesions (damages) which produce anesthesia may be external or internal.

Proof

The human body has protective mechanisms to maintain its health and integrity vs. any kind of trauma (damage). Those dangers to the body can come from the outside or the inside (axiom 1). This protection vs them require vigilance vs internal or external dangers (obs 3). Deep worries of the mind about those dangers may induce anesthesia. Thus internal or external threats may cause anesthesia. QED

Corollary

Lipothymia may suddenly occur after an internal accident, e.g., an abscess bursting open in the chest, severe vomiting, marked increase in blood flow, prolonged fasting, ingestion of poisons, etc. Anesthesia may also ensue apoplexia where there is arrest of the circulation to the brain, brain hemorrhage, or brain edema.

HYPOTHESIS 11

Anesthesia may be induced by deep thinking or vivid memories.

Proof

Deep thinking or vivid memories can produce various phenomena in the body and in the mind/soul. Deep contemplation may also induce various

changes in the mind/soul (see def 1). This deep contemplation and the changes it produces may cause anesthesia (def 1). Thus anesthesia can be produced by deep thinking and memories.

Corollary

It is well known that fright may induce lipothymia (fainting). So can the sight of blood; most people pass out when they see their own blood flow. Also a girl at the seashore may faint when she sees her relatives sail away. I will easily demonstrate later in this dissertation that various diseases can produce anesthesia.

HYPOTHESIS 12

Intense pain can cause anesthesia.

Proof

Pain is an unpleasant sensation in response to body damage or fear in anticipating that damage (see corol, obs 3). This unpleasant sensation in a very sensitiv person who cannot avoid or surmount that danger may lead to a suppression of the sensation (consciousness) (see corol, axiom 9) and this may lead to anesthesia (see def 1). Thus severe pains may lead to anesthesia. QED

Corollary

Clinical practice provides numerous examples of anesthesia occurring during lipothymia or carus. Ancient physicians such as Hippocrates or Galenus argued, based on their experience, on the influence of severe pain on the mind/soul. This influence had been noticed by the old philosophers, e.g., Seneca (Letter 78) who felt that no human could stand severe pain for long and that the merciful Nature only allowed short and bearable suffering.

The most severe pains generally occur in the body's most superficial parts: the joints, nerves, surface of the skin, bony prominences. Under suffering those parts rapidly become numb and soon stop transmitting the painful stimuli to the brain, due to a loss or disruption of the transmitting humors or other transmitting mechanisms. This leads to a decrease of sensorium

(consciousness). Thus the pains caused by a gouty foot or hand or spinal diseases soon become dull. All the severe, griping body pains and ills abate, the sensory stimuli become extinguished and this puts an end to the patient's suffering. Thus very severe pain is generally spared to the human beings.

HYPOTHESIS 13

The mind/soul does not leave the body during anesthesia.

Proof

Under anesthesia the loss of sensorium is such that the mind/soul stops registering sensory stimuli and reacting reflexively to them (see def 2). This state persists as long as the mind/soul remains in deep preoccupation. Thus the mind does not leave the body during anesthesia. QED

Corollary

Many think that during anesthesia the mind/soul leaves the body and exists somewhere else outside of it. I do not want to discuss or prove that the word "ecstasy" means "being removed and placed outside" since the etymiological meaning of ecstasy is "to be outside." This is why some people prefer the word rapture rather than ecstasy to describe that emotional state. Some writers use the word ecstasy to mean "admiration" (see Mark 5:42; Luke 5:26). For other authors ecstasy means divine fear (Acts 3:10). The above explains why for some writers ecstasy implies that the mind/soul is absent from the body, that it is "snatched away."

Geomantia has even claimed that when painters want to create an artistic masterpiece, their mind/soul leaves their body and enters their work to produce that masterpiece. There exist many stories of the mind/soul leaving the body but this has never been well proven.

Pliny (book 7, Chap 52) cites the case of a Herotius Clazomenius whose mind/soul left his body and roamed far away from it. His body was half-dead and unresponsive to any noxious stimulus. They applied to his body a plaster of cantharides (Spanish fly), a poison which vesicates the skin. This brought his mind/soul back into his body. Thus the Spanish fly brought him back to life.

In his book "Occult Philosophy," Coret.Agripa mentions Norwegians and Finns whose mind/soul left their bodies for 3 days then returned from far away. One has (falsely) accused of witchcraft people who claim to have personally flown to the top of some mountain then returned to tell about the wonderful things they had experienced during their trip.

In reality, those women had stayed home in bed with their husband; they were in such a deep sleep that they couldn't feel severe pinches and blows. See Mich.Freudii's "Wisdom and Questions of Witchcraft" (quest 61) about those women: though their body had remained in its place and they didn't move in response to noxious stimuli, one thought that the devil had taken their mind/soul away; they laid immobile "frozen," until their mind/soul had returned to their body.

Who wants more testimonies can consult Bodinus Wierum as well as other writers on witchcraft. As for me, I believe that no power can remove the mind/soul or the vital centers from the body. Only the Creator himself can order this separation (See axiom 1) and this only occurs at death.

The book of Judges (Bible) says nothing about this subject. Those myths have been created by the witches' own confessions which have received legal sanctioning.

In Tabor's "Tract.Analys.Torture" (art 4) J. Wichandum advises the younger judges to be careful in their sentencing. He feels that the stories told by people who dream aloud about extraordinary events are doubtful. Physicians should advise the judges to follow Carpzonio's conclusions about criminal practice that nothing should be concluded from witches' confessions.

HYPOTHESIS 14

Vapors (fumes) entering the body may produce anesthesia.

Proof

Deep considerations on how to prevent or treat internal body harm or avoid imminent dangers to the body can cause anesthesia (axiom 11). Toxic vapors, if they enter the body, can constitute such a danger. Thus vapors can cause anesthesia if they diffuse into the body. QED

Corollary

Carus (def 6) has been thought to be one of the types of anesthesia, which can be caused by fumes. We will mention narcotics ("narcotica"), opiates ("opiata") fumes from the incomplete combustion of coal, inhalation of wines of superior quality or of strong beers (especially farmers' home brews) rosemary (mint) and various other pollutants. Those fould vapors can be detected by their odor. Whoever has doubts about the smell of wine should ask any sot. He will tell you that one can smell wine on the breath of any drunk on the day following his binge. This odor on a person's breath may legally suffice to find him guilty of drunkenness or may be used to force him to confess. This is mentioned in J.C. (judicial code?) which deals with those judicial matters.

The body's vital centers are the protective mechanism, which directs (controls) the elimination of those vapors from the body. This elimination takes place in various parts of the body (see axiom 1). This elimination is spontaneous but may be increased by physical activity. The two main routes of elimination are the skin and the lungs. The blood brings those vapors to those organs. They spontaneously leave the body even when the latter is immobile. During this time the vital centers remain withdrawn and unresponsive to external stimuli, i.e., in sensory remission or anesthesia. In common parlance a drunk is described as "buried" in a deep sleep until he comes out of his intoxication" (Rausch). Elimination thru sweat continues during sleep even when all the other eliminatory functions are stopped.

HYPOTHESIS 15

Anesthesia occurring during torture is not evidence of witchcraft.

Proof

Intense pains, be they caused by torture or violence, or be they imaginary, may cause anesthesia so as to allow the mind/soul to absent itself from those painful stimuli. Thus anesthesia occurring during torture is not a sign of witchcraft. QED

Corollary

Legal and religious codes recommend that torture be applied until the accused stops moaning and crying. The accused at that time will lie on the rack, head down, immobile and unsensitive to pain. When this occurs under severe torture it is often attributed to witchcraft or stubbornness (see obs 1). But this is a serious matter and should be carefully discussed. Most accused who slip into anesthesia while on the torture rack are old women, young girls or very old people. Anesthesia under torture rarely occurs in vigorous, middle-aged men. Is it simply fainting (lipothymia) due to weakness of body and mind/soul when the accused sees the instruments of torture or is placed on the rack? In common parlance the accused is said to "lie dead." But if this was the case, shouldn't the witnesses of such a horrible scene also faint?

This sensitivity of the soul/mind (which is not always related to weakness of the body) is expressed in the eyes which seem to refuse to witness such cruelty and thus become covered with tears. Which presbyterium (elder? magistrate? priest?) would then attribute to witchcraft the tortured's awful moans under anesthesia? St. Augustine himself who saw those things with his own eyes explained in his book (The City of God 14:14) how many people had thus been thought to be witches. A presbyterium (elder? priest? magistrate?) named Restitutus (Parish Church of Calamensis) also mentions hearing the moans of tortured persons even though they had lost consciousness and lied down as if dead so that they did not feel the blows and twistings nor the burning of their flesh even though their tissues were destroyed by the flame. Which unlightened judge would suspect witchcraft when old women, young girls or oldsters pass out into anesthesia whereas young or more stoic men remain conscious? One does not have to think of witchcraft when old women, girls or oldsters lose their courage while facing torture and faint away.

Some people of weak character may remain conscious during torture and instead produce various unvoluntary movements such as shivering, shaking, tearing, passing stools and urine (they literally have to "piss") (in German in text). In some others the mind/soul fearing future harm, takes leave of the body and they become and stay unconscious. But most people undergoing the severe pains of torture pass into anesthesia so as not to feel the horrible pains of the fire. What judge would then conclude that passing out

and slipping into anesthesia is due to witchcraft and that true justice is achieved if this anesthesia is considered to be a sign of witchcraft?

The book of the famous Strickius (7:4:16) seems to infer that anesthesia is no evidence of witchcraft. J Oldenkoppio also agrees.

H. Bodinus sits on both sides of the fence in this matter of anesthesia vs witchcraft and in his 1701 writings agrees that anesthesia is a sign of witchcraft while he denies that relationship in 1709. He also fails to maintain the natural types of anesthesia as occurs in delirium, stupors, carus of neglect (slovenliness), brain asphyxia, lassitude, ecstasy, all of which may induce a deep sleep.

HYPOTHESIS 16 (14 in text)

Anesthesia is generally thought to be difficult to treat.

Proof

There is under anesthesia an extraordinary loss of consciousness (see def 1). Medical treatment should be directed towards restoring this sensory activity. But medications known to be active on the mind/soul are few. Hence anesthesia is thought to be difficult to cure.

Corollary

I won't insist in drawing conclusions from this proof, since I mentioned in my preface that I essentially derived my ideas from the nature of the sleeping disorders.

HYPOTHESIS 17 (15 in text)

Fluctuating anesthesia may be more or less difficult to cure.

Proof

The degree of the loss of consciousness varies with the depth of anesthesia and at times it may decrease or even disappear (axiom 5). The action of drugs depends on the depth of the sensory loss. Thus fluctuating anesthesia is more or less difficult to cure.

Corollary

This is a conclusion of what I mentioned above. The effects of a drug depend not only of its physical properties (if this was the case they would work on everybody and would never fail) but they also depend on the soul/mind of the patient, and the latter is variable in character and pattern. Books on the action of drugs describe great variations in their action on the mind/soul as if the mind/soul couldn't decide whether it will accept the drug or not. But drugs can't work if there is decrease (and a fortiori complete loss) of consciousness (sensorium). Hence it is difficult to judge whether a drug works under anesthesia.

HYPOTHESIS 18 (16)

Anesthesia of the 1st degree is impossible to cure; in that of the 2nd degree, medical treatment is of little value or ineffective. The treatment is difficult in anesthesia of the 3rd degree; it is easy in that of the 4th degree.

Proof

In anesthesia of the 1st degree (e.g., catalepsy) there is sudden and severe loss of sensorium (def 5) with inability to receive any stimulus (obs 2).

In anesthesia of the 2nd degree, e.g., divine ecstasy (obs 1) or enthusiasm for "theologia moralis" (spiritual theology? Study of God?) mediations are futile.

In anesthesia of the 3rd degree, e.g., ecstasy of doubtful origin (obs 1) syncope, or carus there is serious loss of sensorium and the mind/soul rarely emerges from its deep preoccupation or lets in an occasional stimulus. In anesthesia of the 4th degree, e.g., lipothymia or deep mediation, there is only transient loss of sensory activity.

Thus anesthesia of the 1st degree is difficult to cure; in that of the 2nd degree treatment is very difficult or ineffective; anesthesia of the 3rd degree is difficult to cure, whereas the cure is easy in that of the 4th degree. QED

Corollary

The scope of this dissertation does not involve the study of the causes, prognosis and cures of the diseases included under the term anesthesia. I will simply point out how hard it is for a physician called to treat a patient under anesthesia to formulate a diagnosis when experienced physicians like Leonid.Poliatr. or the wise Henry of Heer called to see a cataleptic (Med Lit Obs 1:3) could not do so. Any experienced physician would agree with my statement that such a patient is hard to cure. This is also supported by Pliny who thought that a physical disease became more severe if it reached (involved) the mind. I will also add that many such patients die.

The physician may have to intervene during a paroxysm (acute crisis) although the sensory defect weakens the action of the drug. When not in acute crisis, the patient generally gets along on his own and does not need a physician. One should not blame a physician who gives a guarded prognosis when called to care for such a patient.

HYPOTHESIS 17 (15)

Ethical (moral) treatments can be tried in anesthesia.

Proof

Because anesthesia is not a disease of the body but of the mind/soul (hypoth 1) psychic remedies are acceptable. The treatment of anesthesia thus includes the use of ethical (moral) treatments. QED

Corollary

I would include among the treatments of the diseases of the mind/soul not only ethical philosophy (philosophia ethica) but also moral theology (theologia moralis). This has been known to help in the treatment of anesthesia and to restore a sound mind/soul into a healthy body. This is based on mankind's moral principles. Our dear Fechtio (Precise of Moral Theology, thesis 1) warns vs. ambition, vain search for fame, or morbid fears by public leaders of being deposed or executed. The rules to achieve peace of mind (harmony) are also all important to the mind/soul and wise men should be praised for avoiding sternness/rigidity of mind, bigotry (religious zeal) or obsessive search for the truth.

Hypothesis 18 (16)

Political (civic) subjects may be a cure for anesthesia.

Proof

Since anesthesia is a disease of the mind/soul caused by deep preoccupation of some subjects (def 1, obs 1), political (civic?) matters may offer the mind some elevated topics which are more real than the fictitious preoccupations of the disturbed mind and will chase them away and will cause the mind to resume perceiving the sensori stimuli (def 1). Thus the political/civic subjects may be a cure for anesthesia. QED

Corollary

Under the term political (civic?) subjects I include political science, the science of sound public administration and the art of educating citizens on how to live properly and contribute to the public good.

I doubt that political subjects can cure divine ecstasy but it may help treat ecstasies of the 2nd or 3rd degree, removing from the mind its deep preoccupations and stimulating it with more rational and more elevated political ideas. I think that this is very effective in that type of anesthesia. I would also include as effective also other subjects besides politics, especially marriage and work. Marriage is undoubtedly of great help as can be seen with widows who have been deprived fo the sweet comforts of the conjugal bed; one can also see a troubled mind in virgins and people who have taken a vow of chastity.

This remedy's worth is also confirmed by case reports of ectasics being cured by marriage. I can't tell whether this is due to the sweet pleasures of the union or the sexual excitement. There are many examples but I will simply quote the case of Christina Paniotova, a poetess famous throughout Polland and Bohemia. All her visions went away whenever she was kissed and embraced by her friend and they disappeared for good after she got married.

I will also quote Beckmanus (Dissert De Prod.Sanguinis) & Joh.Gerdisii, a professor at this illustrious university. Both disagree with griphicus Alma (Grisenwald, 1663) about the role of virginity on the mind/soul and its heavenly transports. I do not know whether our delicate young girls

experience those heavenly visions if they can't be kissed and embraced even though they want to.

Concerning the role of work, one thing is certain: hard work will keep futile (idle) thoughts away.

HYPOTHESIS 19 (17)

Severe anesthesia cannot be helped by medicine.

Proof

Under severe anesthesia, the sensorial activity (consciousness) is diminished or lost (def 1,6), and the mind/soul's protective mechanisms that medicine could influence are thus taken away along with the sensory activity. Thus medicine cannot help severe anesthsia. QED

Corollary

The book of Prophets (Bible?) do not say anything about the sleep disorders that we call anesthesia. It has been treated with skin vesicants, compresses, inhalation of spirits, balsam application to the temples, tongue pulling, gold powder to nostrils to cause sneezing, pulling of the hair and beard, rubbing with liniment, rubbing joints and limbs with aqueous spirits, moistening of the skin, etc. All this should be tried but experience, both local and foreign, leaves me doubtful and undecided. As the saying goes, "much noise but very few facts."

In low grade anesthesia, there is no need for the above remedies, as simple things like loosening the clothes, throwing cold water to the face, blowing cold air, yelling, and light slaps to the body suffice.

In anesthesia of the 1st, 2nd, 3rd degree in which consciousness is quite absent, the above remedies are ineffective. Nor are any of those treatments of any value as long as that sensory loss persists: the vesicants won't irritate the skin nor the emetics cause vomiting. All this is also ineffective when dealing with people drunk to the point of stupor (a common occurrence): rubbing the temples, pulling and tweezing, etc., will not raise such drunks from their "sleep of the grave." Only tie will help them. As the sots say, one must leave them alone to sleep off their

intoxication until they wake up spontaneously. If they are not too stuporous and have some food in their stomach, they may occasionally vomit and this will get rid of their alcohol and help them to wake up.

Can a physician in such case be more than a mere spectator? I don not believe that he can do anything except pointing out that all remedies are useless until there is some spontaneous return of the mind/soul's activity.

HYPOTHESIS 20 (18)

Medical treatment may prevent the recurrence of anesthesia.

Proof

If anesthesia is due to an obtunding of the sensorium due to the mind worrying about physical diseases, especially concern about the body secretions and excretions, those worries and preoccupation may be removed and the recurrence of anesthesia may be prevented by attending to those physical problems, especially secretions and excretions. Thus medical treatment may help prevent the recurrence of anesthesia.

Corollary

The preceding propositions show the ineffectiveness of medical treatment for most types of anesthesia, but there is a bright spot: the physician may succeed in preventing their paroxysms (acute crises) or prevent their frequent recurrence. This prevention, however, is limited to removing the physical causes in the body itself, physical factors through which the mind/soul is affected, since…since the mind must watch for and protect the body vs. any damage.

This treatment includes purgatives (the strongest of all evacuants), emetics, emmenagogues, diaphoretics, acid, hot baths, etc… Most treatments are thus limited agents which can influence the secretions and excretions. I won't go into more details as this is well described in all the medical textbooks and there is no need to repeat all this here.

HYPOTHESIS 21

Music may help attenuate the severity of anesthesia or prevent its recurrence.

Proof

Even under anesthesia, the sensory organs continue to receive the stimuli (def 1, 2) including the auditory stimuli (sounds). Hearing persists even after all the other modalities are lost. The airwaves continue to impact the eardrums and those vibrations are the largest when produced by musical sounds. Those tympanic vibrations normally actuate (cause, produce) a sensation. In mild forms of anesthesia, this musical stimulus may still reach the mind and activate it. Hence in moderate or not too severe anesthesia, music may help. It may also prevent recurrence of severe anesthesia. QED.

Corollary

I won't say much on the role of music in medicine. AD Brodelius has written a very charming (pleasant) dissertation on the soothing action of singing and instrumental music in the treatment of diseases. I doubt that music, no more than other remedies, can help in severe anesthesia of the 1st degree (e.g., catalepsy) but it may be useful in less severe forms such as ecstasy, carus, or deep meditation.

I will add that it is generally assumed, though I have no personal experience, that when the sensorium becomes obtunded, vision is the first to go and hearing the last to disappear and that when anesthesia subsides hearing is the first sensation to return. Unlike the eyes, which have eyelids, the external ear has no external valves to shut off the sounds. Thus the airwaves in the auditory canal continue to make the eardrums vibrate but under anesthesia the sound is not perceived by the brain. The degree of remission of anesthesia can be judged by estimating how well the sounds are perceived.

If the mind is offered a pleasant stimulus it applies itself to, and concentrates on, the latter and this may help rouse it from its deep depression.

Whether music can improve a deep anesthesia or at least prevent its recurrence will depend on a person's temperament, i.e., the degree of his melancholia. It is difficult to change the temperament (character, nature)

of a person simply by reasoning with him. Those melancholics tend to investigate and contemplate everything, prefer wakefulness to sleep, solitude to social intercourse.

Pleasant conversations with friends are often recommended to treat such conditions but I doubt that this is very useful. But music may soothe the soul and pull it out of its depression (sadness).

[THE END]